

Abstract

An axle disconnect system is provided whereby axles of a tandem or multi-axle vehicle may be easily and quickly engaged and disengaged as required and whereby the ring gear and differential gears remain stationary when the axle is disengaged. In multi-axle vehicles, a dual disconnect mechanism is contained in the front and auxiliary rear axles. When only the primary rear axle is necessary to propel the vehicle (e.g., during highway use) the transfer case interrupts torque to the front axle. Similarly, a clutch also interrupts torque transmission to the auxiliary rear axle. In this mode, the dual disconnect mechanism prevents the axle output shafts from back-driving the differential, thereby reducing parasitic losses and wear.